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MARSHALL WORK INSTRUCTION

AD01

AIR EMISSIONS COMPLIANCE

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1. PURPOSE

This Marshall Work Instruction (MWI) establishes the method for air emissions compliance activities at Marshall Space Flight Center (MSFC). This MWI provides instructions for the requirements listed in Marshall Procedures and Guidelines (MPG) 8500.1, "MSFC Environmental Management Program." The CAA and CAA Amendments (CAAA) requirements are administered and regulated by the U.S. Environmental Protection Agency (EPA), Alabama Department of Environmental Management (ADEM) air quality requirements, and enforced by the MSFC Major Source Operating Permit (Title V Permit).

2. APPLICABILITY

This MWI applies to MSFC employees, contractors, and subcontractors that contribute to MSFC air pollutant emissions.

3. APPLICABLE DOCUMENTS

3.1 MPG 8500.1, "MSFC Environmental Management Programs"
3.2 MSFC Major Source Operating Permit, Issued January 4, 2000 Title V Permit)
3.3 40 Code of Federal Regulations (CFR) Subpart 82, "Protection of Stratospheric Ozone"
3.4 40 CFR Subpart 68, "Chemical Accident Prevention Provisions"
3.5 40 CFR Subpart 63, "NESHAP for Source Categories"
3.6 40 CFR Subpart 70, "State Operating Permit Programs"

4. REFERENCES

NASA Procedures and Guidelines (NPG) 8500.1, "NASA Environmental Management"

5. DEFINITIONS

5.1 Acronyms.
5.1.1 1,1,1-TCA - 1,1,1-trichloroethane
5.1.2 ADEM - Alabama Department of Environmental Management
5.1.3 CAA – Clean Air Act
5.1.4 CAAA – Clean Air Act Amendments
5.1.5 CAS - Chemical Abstract Service
5.1.6 CFC - Chlorofluorocarbon
5.1.7 CFR - Code of Federal Regulations
5.1.8 CO – Carbon monoxide
5.1.9 EED - Environmental Engineering Department
5.1.10 FED – Facilities Engineering Department
5.1.11 EPA - U.S. Environmental Protection Agency

5.1.12 HAP - Hazardous air pollutant
5.1.13 HCFC - Hydrochlorofluorocarbon
5.1.14 MACT - Maximum achievable control technology
5.1.15 Btu - British thermal units
5.1.16 kPa - Kilopascal
5.1.17 LSD – Logistics Services Department
5.1.18 MACT – Maximum Achievable Control Technology
5.1.19 MSFC - Marshall Space Flight Center
5.1.20 MPG – Marshall Procedures and Guidelines
5.1.21 MWI - Marshall Work Instruction
5.1.22 NAAQS – National Ambient Air Quality Standards
5.1.23 NASA - National Aeronautics and Space Administration
5.1.24 NESHAP - National Emission Standards for Hazardous Air Pollutant
5.1.25 NSPS – New Source Performance Standards
5.1.26 NSR – New Source Review
5.1.27 NOx – Nitrogen oxides
5.1.28 O_3 - Ozone
5.1.29 O&M Plan – Operation and Maintenance Plan
5.1.30 ODS – Ozone depleting substance
5.1.31 PCE - Perchloroethylene
5.1.32 PM_{10} – Particulate matter less than 10 microns
5.1.33 Psia - Pounds per square inch absolute
5.1.34 PSD – Prevention of Significant Deterioration
5.1.35 RMP – Risk Management Program
5.1.36 SIP – State Implementation Plan
5.1.37 SO_2 – Sulfur dioxide
5.1.38 VOC - Volatile organic compound

5.2 Air Pollution Control Equipment. Devices used for abating, limiting, controlling, or capturing emissions from air emissions sources.

5.3 Air Stripper. - Equipment used to remove VOCs from groundwater or any liquid stream by contacting with air. The VOCs are picked up by the air and vented out to the atmosphere, and the stripped water is sent to storage.

5.4 Bulk Gasoline Plant

a. EPA Definition. Any gasoline distribution facility that has a gasoline throughput less than or equal to 75,700 liters per day. Gasoline throughput shall be the maximum calculated design throughput as may be limited by compliance with an enforceable condition under Federal requirement or Federal, State or local law, and discoverable by the EPA Administrator and any other person.

b. ADEM Definition. A gasoline storage and distribution facility with an average daily throughput of 76,000 liters (20,000 gallons) or less in any calendar month that receives gasoline from bulk terminals by trailer transport, stores it in tanks, and subsequently dispenses the gasoline via account trucks to local farms, businesses, and gasoline-dispensing facilities.

5.5 Class I and Class II Ozone Depleting Substances (ODS). Controlled substances listed in Appendix A (Class I ODS) and Appendix B (Class II ODS), respectively to EPA's Protection of Stratospheric Ozone Standards (40 CFR 82, Subpart A). The following website address provides a link to the Class I and Class II ODS. http://www.access.gpo.gov/nara/cfr/cfrhtml_00/Title_40/40cfr82_00.html

5.6 Clean Air Act Amendments. The scope of the CAAA is extensive and includes eleven titles (chapters). For example, Title V establishes a new permitting system for major sources of air pollution, and Title VI governs the protection of stratospheric ozone and global warming.

5.7 Cold Cleaning. Batch process of cleaning and removing soils from metal surfaces by spraying, brushing, flushing, or immersion while maintaining the solvent below its boiling point. Wipe cleaning is not included in this definition.

5.8 Construction. Fabrication, erection, demolition, removal or installation of an affected facility.

5.9 Criteria Pollutants. Carbon monoxide (CO), ozone (O_3), sulfur dioxide (SO_2), nitrogen oxides (NO_X), particulate matter (PM_{10}) (less than 10 microns), and lead compounds.

5.10 Direct-Fired Equipment. Chamber within which heat is used to bake, cure, polymerize, and/or dry an object.

5.11 Engine Testing. Testing of demonstrator and full-scale versions of propulsion systems that combust RP-1 fuel. Propulsion systems that combust only liquid hydrogen and liquid oxygen are not included in this definition because there are no VOC emissions from combustion and they are not regulated by ADEM.

5.12 Gasoline. A petroleum distillate having a Reid vapor pressure of 27.6 kPa (4 pounds per square inch absolute [psia]) or greater that is used as fuel for internal combustion engines.

5.13 Gasoline Tank Truck. Tank trucks or trailers equipped with a storage tank and used for the transport of gasoline from sources of supply to stationary storage tanks of gasoline dispensing facilities, bulk gasoline plants, or bulk gasoline terminals.

5.14 Hazardous Air Pollutant. Any air pollutant listed in or pursuant to section 112(b) of the CAA or in Appendix G to ADEM Administrative Code 335-3-16.

5.15 Halogenated HAP Solvent. Methylene chloride (Chemical Abstract Service [CAS] No. 75-09-2), perchloroethylene (PCE) (CAS No. 127-18-4), trichloroethylene (CAS No. 79-01-6), 1,1,1-trichloroethane (1,1,1-TCA) (CAS No. 71-55-6), carbon tetrachloride (CAS No. 56-23-5), and chloroform (CAS No. 67-66-3).

5.16 Hand-wipe Cleaning Operation. Removal of contaminants such as dirt, grease, oil, and coatings from an aerospace vehicle, or component by physically rubbing it with a material such as a rag, paper, or cotton swab that has been moistened with a cleaning solvent.

5.17 Indirect-Fired Fuel-Burning Equipment. Equipment, device, or contrivance and all appurtenances thereto, including ducts, breechings, fuel-feeding equipment, ash removal equipment, combustion controls, stacks, and chimney, used primarily, but not exclusively, to burn any fuel for the purpose of indirect heating in which the material being heated is not contacted by and adds no substance to the products of combustion.

5.18 Insignificant Activity. Any air emissions or air emissions unit at a plant that has the potential to emit less than 5 tons per year of any criteria pollutant or less than 1000 pounds per year of any HAP. Subject to EPA review and approval, the ADEM Director may determine that certain types or classes of units may be considered insignificant at higher emission levels, or that, due to the nature of the pollutant(s) emitted, a unit may be considered significant at a lower emission rate. Activities subject to applicable requirements of NSPS, NESHAP or MACT shall not be classified as insignificant. The insignificant activities are listed in Section 2 of the "Title V Trivial and Insignificant Activities" posted in the "Forms" section of the ADEM website at: http://www.adem.state.al.us/AirDivision/Air%20Forms/tilis3.doc

5.19 Internal Combustion Engine. A heat engine in which the pressure necessary to produce motion of the mechanism results from the ignition or burning of fuel within the engine proper

(e.g., one or more engine cylinders or, in the case of a gas turbine engine, in the combustor component) rather than an external furnace, as in a steam engine.

5.20 Major Source. A major source is any stationary source (or group of sources in a contiguous area under common control) emitting, or with the potential to emit (considering controls) 10 tons per year of any HAP or 25 tons per year of any combination of HAPs.

5.21 Malfunction. Any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

5.22 Modification. Any physical change in, or change in the method of operation of, an existing facility that increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or that results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted.

5.23 O&M Plans. Written operating and maintenance procedures for proper operation and maintenance of the air emissions equipment and air emissions control device.

5.24 Ozone Depleting Substance. Synthetic compounds, including CFCs and HCFCs, which migrate to the stratosphere and destroy the ozone layer.

5.25 Opacity. The degree to which emissions reduce the transmission of light and obscure the view of the background. For continuous opacity monitoring systems, it is the fraction of incident light that is attenuated by an optical medium.

5.26 Operate. Using the equipment for its intended purpose.

5.27 Paint Booth or Paint Spray Booth or Surface Coating Booth. An enclosed room with an air circulation and exhaust system or enclosed area with an air circulation and exhaust system within a building or a platform with a hood and exhaust system for paint or coating or corrosion control chemical application.

5.28 Particulate Matter. Any finely divided solid or liquid material, other than uncombined water, as measured by the reference methods specified under each applicable subpart, or an equivalent or alternative method.

5.29 Pipe Cleaning. Cleaning of existing or new lines carrying liquid oxygen, liquid nitrogen, gaseous nitrogen, gaseous helium, and fuel lines to NASA cleaning standards using solvents to remove dirt, grease and other contaminants from the inside surface of the line.

5.30 Risk Management Program. The Risk Management Program (RMP) was established to provide state and local governments and the public with information about the risk of chemical accidents and what facilities are doing to prevent such accidents. The RMP contains three elements: a hazard assessment, a prevention program, and an emergency response program for any regulated substance stored on site in quantities exceeding threshold quantities as established in the rule.

5.31 Shutdown. Cessation of operation of an affected facility for any purpose.

5.32 Solvent. Organic materials which are liquid at standard conditions and which are used as dissolvers, viscosity reducers, or cleaning agents (ADEM 335-3-1-.02(ppp)).

5.33 Storage Vessel or Storage Tank. Each tank, reservoir, or container used for the storage of volatile organic liquids but does not include:(1) frames, housing, auxiliary supports, or other components that are not directly involved in the containment of liquids or vapors; or (2) subsurface caverns or porous rock reservoirs.

5.34 Title V Permit. Title V is part of the 1990 CAAA that mandates creation of an Operating Permits Program in each state in order to create consistency in operating permit requirements throughout the country. The Title V Permit is a federally enforceable permit that consolidates into one document all applicable pollution control requirements to which a "major" source is subject.

5.35 Trivial Activity. Any air emissions from a unit that is considered inconsequential. The trivial activities are listed in Section 1 of the "Title V Trivial and Insignificant Activities" posted in the "Forms" section of the ADEM website at: http://www.adem.state.al.us/AirDivision/Air%20Forms/tilis3.doc

5.36 Vapor Balance System (Stage I). A combination of pipes or hoses that create a closed system between the vapor spaces of an unloading and a receiving gasoline tank such that vapors

displaced from the receiving tank are transferred to the tank being unloaded.

5.37 Vapor Collection System. A vapor transport system that uses direct displacement by the gasoline being transferred to force vapors from the vessel being loaded into either a vessel being unloaded or a vapor control system or vapor holding tank.

5.38 Vapor Control System. A system that prevents release to the atmosphere of at least 90 percent by weight of organic compounds in the vapors displaced from a vessel during transfer of gasoline.

5.39 Visible Emission. The observation of an emission of opacity or optical density above the threshold of vision.

5.40 Volatile Organic Compounds. Any organic compound which participates in atmospheric photochemical reactions; or which is measured by a reference method, an equivalent method, an alternative method, or which is determined by procedures specified under the subparts of 40 CFR 60.

6. INSTRUCTIONS

Air emission significant sources are included in the MSFC Major Source Operating Permit (Title V permit). The Title V permit is located at:

http://eemo.msfc.nasa.gov/environmental/activities/air/title_V.pdf

Before any article, machine, equipment, or other contrivance described in the paragraph below may be constructed, operated or used, an ADEM air permit must be obtained or the Title V Permit modified.

The MSFC Title V permit includes indirect-fired fuel burning equipment such as boilers and internal combustion engines of rating greater than five (5) million British Thermal Units (Btu) per hour; gasoline, diesel, fuel oil No. 2, JP-8, and RP-1 storage tanks of capacity greater than 2,000 gallons; surface coating operations, cold cleaning operations, batch vapor cleaning operations, handwipe cleaning and pipe cleaning operations utilizing halogenated HAP solvents or ODS for cleaning, machine shop operations emitting more than five (5) tons per year of any criteria pollutant or more than 1,000 pounds of any HAP, gasoline bulk plant, propulsion engine and launch vehicle system testing operations, and air stripper operation.

Building, erecting, altering, or replacing any article, machine, equipment, or other contrivance, the use of which may cause the issuance of or an increase in the issuance of air contaminants or the use of which may eliminate or reduce or control the issuance of air contaminants requires a notification to be submitted to ADEM at least 10 days prior to construction.

6.1 General.

6.1.1 Responsibility of MSFC User Organizations. Each MSFC User Organization shall:

6.1.1.1 Prepare an operating procedure that addresses the air compliance activities for each source or group of sources covered by the Title V permit.

6.1.1.2 Provide operational information as requested by the EED.

6.1.1.3 Provide information as requested by the EED to make a determination of permit and regulatory compliance requirements for any new source of air emissions or air pollution control device, modification of existing air emissions source or air pollution control device, any source of air emissions or air pollution control device planned for construction, modification, relocation or replacement. MSFC organizations shall consult with the EED regarding determination of significant/insignificant status. The insignificant source list located at the following address can be reviewed for examples of potential air emission sources:

http://www.adem.state.al.us/AirDivision/Air%20Forms/tilis3.doc

6.1.1.4 Ensure that a review of permit requirements and regulatory applicability has been conducted by the EED before operating or energizing for the first time any new or newly constructed air emissions equipment or air pollution control device or an existing but relocated/replacement air emissions equipment or air pollution control device.

6.1.1.5 Comply in a timely manner with applicable requirements that become effective during the term of the Title V permit.

6.1.1.6 Keep the Title V permit on file or on display at all times at the facility where the equipment for which the permit has been issued is located and make the permit readily available for inspection by any or all persons who may request to see it.

6.1.1.7 Submit the following when requested by the EED:

a. Current compliance status addressing the monitoring, recordkeeping, and reporting requirements in the Title V permit. (See Sections 9.3-9.5)

b. Compliance status for duration of reporting period.

c. Methods used for determining compliance.

d. Identify whether the method used for determining compliance is continuous or intermittent.

e. Other facts required to determine compliance status of source.

6.1.1.8 Take precautions to prevent fugitive dust emanating from plant roads, grounds, stockpiles, screens, dryers, hoppers, ductwork, etc. by following the appropriate methods summarized below and listed in detail in the Title V permit under "Item 18: Fugitive Dust".

a. By application of water.

b. By reducing the speed of vehicular traffic.

c. By paving.

d. By application of binders to the road surface.

e. By any combination of the above methods.

6.1.1.9 Ensure that each point of emission which requires testing is equipped with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed.

6.1.1.10 Follow the requirements summarized below and listed in detail in the Title V permit under "Item 25: Title VI Requirements (refrigerants)" for appliances or refrigeration equipment, including air conditioning equipment, which use Class I or Class II ozone-depleting substances (ODS).

a. Shall not knowingly vent or otherwise release any Class I or Class II ODS into the environment during the repair, servicing, maintenance, or disposal of appliances or refrigeration equipment, including air conditioning equipment as provided in 40 CFR, Subpart 82.154.

b. Follow work practices listed in 40 CFR 82.156, for maintaining, servicing, and repairing appliances or refrigeration equipment, including air conditioning equipment.

c. Use certified recycling and recovery equipment as specified in 40 CFR 82.158.

d. Certify to EPA the acquisition of certified recycling and recovery equipment as specified in 40 CFR 82.162.

e. Authorize only certified technicians to maintain, service or repair the appliances or refrigeration equipment, including air conditioning equipment as specified in 40 CFR 82.161. Keep a readily available copy of certifications of personnel approved to perform maintenance. (See Section 9.9)

f. Keep maintenance and servicing records documenting the date and type of service, as well as the quantity of refrigerant purchased and added to appliances normally containing 50 or more pounds of refrigerant as specified in 40 CFR 82.166. (See Section 9.8)

g. Keep all records required by the permit for a minimum of 3 years.

6.1.1.11 Inform EED immediately, if a toxic or flammable chemical subject to the RMP Rule is present in a process. The list of toxic and flammable chemicals subject to RMP Rule are provided in 40 CFR 68.130, and located at the following website:

http://www.access.gpo.gov/nara/cfr/cfrhtml_00/Title_40/40cfr68_00.html

6.1.1.12 Not install or use any device that conceals or dilutes the air contaminant emissions, which would otherwise violate the ADEM Air Division rules and regulations.

6.1.1.13 Ensure that any source of particulate emissions shall not discharge more than one 6-minute average opacity greater than 20 percent in any 60-minute period. At no time shall any source discharge a 6-minute average opacity of particulate emissions greater than 40 percent.

6.1.1.14 Update the O&M plans for the air emissions sources to reflect changes in the operation and maintenance of the air emissions equipment and associated air pollution control device.

6.1.1.15 Ensure that no actual flight hardware/vehicle component is produced, tested, painted, cleaned, etc. without being evaluated by the EED for permit requirements.

6.1.2 Responsibility of the EED. The EED shall:

6.1.2.1 Submit information requested by ADEM within timeframe set by ADEM.

6.1.2.2 Make a determination of permit and regulatory compliance requirements for sources based on the information provided by the MSFC User Organizations.

6.1.2.3 Verify the significant/insignificant source status determinations requested by the MSFC User Organizations.

6.1.2.4 Prepare and submit notification letters, construction and/or operating permits to ADEM for sources based on the permit and regulatory compliance determination. (See Section 9.24)

6.1.2.5 Inform the MSFC User Organizations of permit and regulatory requirements for sources for which the MSFC User Organizations have provided information.

6.1.2.6 Submit quarterly, semi-annual, and annual Halogenated Solvent Cleaning MACT reports to ADEM; monitoring reports and the Title V semi-annual and annual compliance certifications to ADEM and EPA Region IV. (See Section 9.5)

6.1.2.7 Notify ADEM in writing at least 10 days in advance of all emissions tests to be conducted. (See Section 9.23)

6.1.2.8 Make a determination of RMP Rule applicability for toxic and flammable substances based on information provided by the MSFC User Organizations. Prepare and submit the RMP if the toxic or flammable chemical is present in quantities greater than the threshold quantity listed in the RMP Rule, 40 CFR 68.130, located at the following website:

http://www.access.gpo.gov/nara/cfr/cfrhtml_00/Title_40/40cfr68_00.html

6.2 Deviation from Permit Requirements, Permitted Equipment Breakdown or Malfunction.

6.2.1 Responsibility of MSFC User Organizations. Each MSFC User Organization shall:

6.2.1.1 Immediately notify the EED of any deviation from permit requirements, permitted equipment breakdown/ malfunction, or process upsets which cause increased emissions of air contaminants above an applicable standard indicated in the Title V permit or ADEM Air Division Rules. The notification shall include all pertinent facts including the estimated duration of

breakdown or upset. The notification shall include the probable cause of the deviation, and corrective actions or preventive measures that were taken. (See Section 9.11)

6.2.1.2 Notify EED when the breakdown or upset condition has been corrected. (See Section 9.11)

6.2.2 Responsibility of the EED. The EED shall:

6.2.2.1 Report the deviations from permit requirements including those attributable to upset conditions to ADEM within 24 hours or one (1) working day of such deviations. The report shall include the probable cause of the deviations and any corrective actions or preventive measures that were taken. (See Section 9.6)

6.2.2.2 Notify ADEM when the breakdown or upset condition has been corrected.

6.3 Scheduled Maintenance.

6.3.1 Responsibility of MSFC User Organizations. Each MSFC User Organization shall:

6.3.1.1 Report to EED the intent to shut down permitted air pollution control equipment for scheduled maintenance at least one hundred and twenty (120) hours prior to the planned shutdown, unless such shutdown is accompanied by the shutdown of the source which the equipment is intended to control.

6.3.1.2 Notify EED when the maintenance of the permitted air pollution control equipment is complete and the equipment is operating.

6.3.2 Responsibility of the EED. The EED shall:

6.3.2.1 Report the intent to shut down permitted air pollution control equipment to ADEM at least 24 hours prior to the planned shutdown.

6.3.2.2 Notify ADEM when maintenance is complete and the equipment is operating.

6.4 Boilers.

6.4.1 Responsibility of Facilities Engineering Department. The FED shall:

6.4.1.1 Monitor and record the amount of fuel used in the boilers. (See Section 9.3)

6.4.1.2 Annually analyze the ash content of liquid fuels used in the boilers. (See Section 9.3)

6.4.1.3 Monitor and record the natural gas usage in the boiler designated 4755-EX-02 in the Title V permit. MSFC organizations shall ensure that the boiler does not burn more than 36,000,000 cubic feet of natural gas in any consecutive 12-month period. (See Section 9.3)

6.4.1.4 Visually observe the flame and stack every 2 hours and document problems in logbook, along with corrective actions taken. The flame appearance shall be compact bright yellow-orange with no trails. (See Section 9.3)

6.4.1.5 Record a summary of the 2-hour flame and stack visual observations by date, once per shift, in the maintenance logs for normal operations along with any corrective actions taken. (See Section 9.3)

6.4.1.6 Maintain the "Fire-Eye" in the boilers in good working condition.

6.4.1.7 Check the combustion parameters such as steam pressure, stack temperature, exhaust opacity, and water temperature every 2 hours and log it once during each 8-hour workshift. The MSFC organizations shall use the combustion parameters as the indicators of boiler operation. The exhaust opacity check refers to the visual observation of the stack for any unusual smoke, not for an opacity reading. (See Section 9.3)

6.4.1.8 Immediately shut down the boilers and perform maintenance work if there are any deviations in the indicators of boiler operation such as the steam pressure, stack temperature, exhaust opacity, and water temperature. MSFC organizations shall report such shutdowns to the EED immediately following the instructions in 6.2.1.1 and 6.2.1.2.

6.4.1.9 Calculate the boiler efficiency on a monthly basis by checking the oxygen in flue gas of each boiler and its fuel use at low, medium, and high flame settings and record in log book. (See Section 9.3)

6.4.1.10 Perform boiler maintenance when monthly efficiency checks reveal shortcomings. MSFC organizations shall notify EED immediately about the unscheduled maintenance following the instructions in 6.2.1.1 and 6.2.1.2

6.4.1.11 Maintain the boiler efficiency at minimum 80 percent as required by Contract or at maximum achievable for older boilers.

6.4.1.12 Follow the written O&M plan for proper operation, maintenance, and to maintain the performance efficiency of the boilers.

6.4.1.13 Have the boilers inspected and certified annually by an outside certified contractor. The boiler inspections shall include inspection of tubes, burners, control valves, and opacity to ensure boilers operate as designed. Maintain records of inspections, opacity determinations, and certification for five years.

6.4.1.14 Retain permit required records of monitoring data, maintenance data, and support information for a period of at least 5 years from the date of the monitoring, measurement, report, or application.

6.4.1.15 Keep the records of required monitoring information summarized below and listed in detail in the Title V permit under "Item 20: Recordkeeping Requirements". (See Section 9.6)

a. The date, place, and time of all sampling or measurements.

b. The date analyses were performed.

c. The company or entity that performed the analyses.

d. The analytical techniques or methods used.

e. The results of all analyses.

f. The operating conditions that existed at the time of sampling or measurement.

6.4.2 Responsibility of the LSD. The LSD shall:

6.4.2.1 Ensure that the sulfur content of fuel oil burned in the boilers does not exceed 0.5 percent sulfur by weight.

6.5 Internal Combustion Engines.

6.5.1 Responsibility of the User Organization. The User Organization shall:

6.5.1.1 Properly operate and maintain the internal combustion engines according to the conditions in the Title V permit.

6.5.1.2 Retain permit required records of monitoring data, maintenance data, and support information. (See Section 9.12)

6.6 Surface Coating.

6.6.1 Responsibility of MSFC User Organizations. The MSFC User Organizations shall:

6.6.1.1 Properly operate and maintain the surface coating units and associated control devices according to the conditions listed in the Title V permit.

6.6.1.2 Retain permit required records of monitoring data, maintenance data, and support information for a period of at least 5 years from the date of the monitoring, measurement, report, or application. (See Section 9.13)

6.7 Fuel Storage Tanks.

6.7.1 Responsibility of User Organizations: The User Organizations shall:

6.7.1.1 Ensure that the record of tank dimensions and capacity shall be kept on file for the life of the fuel storage tanks listed in the Tile V permit. (See Section 9.14)

6.7.1.2 Ensure that records of volatile organic liquid stored, the period of storage, and the maximum true vapor pressure of the volatile organic liquid during the storage period are kept for each storage tank listed in the Title V permit. (See Section 9.15)

6.7.1.3 Notify EED immediately of any changes in service of the fuel storage tanks, such as a change in the type of liquid stored and changes in the maximum vapor pressure of the liquid stored.

6.7.1.4 Retain required records of monitoring data, maintenance data, and support information for a period of at least 5 years from the date of the monitoring, measurement, report, or application. (See Section 9.14)

6.8 Cold Cleaning.

6.8.1 Responsibility of MSFC User Organizations. The MSFC User Organizations shall:

6.8.1.1 Properly operate and maintain the cold cleaning units according to the conditions listed in the Title V permit.

6.8.1.2 Report to EED immediately any planned changes of solvents used for cold cleaning operation sources listed in the Title V permit. Planned changes of solvents may be from aqueous to non-aqueous solvent, unregulated non-HAP solvent to a regulated HAP-containing solvent, unregulated solvent to a chlorinated solvent.

6.8.1.3 Retain records of monitoring data, maintenance data, and support information for a period of at least 5 years from the date of the monitoring, measurement, report, or application when required. (See Section 9.23)

6.9 Batch Vapor Halogenated Solvent Cleaning.

6.9.1 Responsibility of MSFC User Organizations. The MSFC User Organizations shall:

6.9.1.1 Properly operate and maintain the batch vapor halogenated solvent cleaning units according to the conditions listed in the Title V permit.

6.9.1.2 Comply with the 3-month rolling average monthly emission limit for the batch vapor halogenated solvent cleaning operations listed in the Title V permit.

6.9.1.3 Follow the procedures in 40 CFR 63.465(b) for adding solvent to the batch vapor halogenated solvent cleaning operations listed in the Title V permit.

6.9.1.4 Record the dates and amounts of solvent added and the solvent composition of any waste removed from the batch vapor halogenated solvent cleaning operations listed in the Title V permit. MSFC organizations shall send monthly reports of solvent additions, solvent deletions, and the solvent composition of any waste removed to EED. (See Section 9.16)

6.9.1.5 Retain permit required records of monitoring data, maintenance data, and support information for a period of at least 5 years from the date of the monitoring, measurement, report, or application. (See Section 9.16)

6.10 Hand-wipe Cleaning.

6.10.1 Responsibility of MSFC User Organizations. The MSFC User Organizations shall:

6.10.1.1 Conduct the hand-wipe cleaning operations according to the conditions in the Title V permit.

6.10.1.2 Retain records of support information, such as the type of solvent used, for a period of at least 5 years from the date of the monitoring, measurement, report, or application when required. (See Section 9.17)

6.11 Machine Shop.

6.11.1 MSFC User Organizations shall properly operate and maintain the machine shop according to the conditions in the Title V permit.

6.12 Gasoline Bulk Plant.

6.12.1 Responsibility of LSD. The LSD shall:

6.12.1.1 Ensure that the bulk gasoline plant shall not have an average daily throughput greater than 20,000 gallons in any calendar month.

6.12.1.2 Ensure that gasoline is not unloaded from the bulk gasoline plant to stationary storage tanks unless each tank is equipped with a vapor balance system.

6.12.1.3 Visually observe to ensure tank trucks or trailers are equipped with vapor balance system consisting of the components indicated in the Title V permit. MSFC organizations shall record visual observations. (See Section 9.2)

6.12.1.4 Not allow the transfer of gasoline between a tank truck or trailer and a stationary storage tank unless the conditions in the Title V permit, specifically, Section 2, Item 5 of the Bulk Plant Operating Permit Summary are met.

6.12.1.5 Operate the vapor collection system and the gasoline loading equipment as specified in the Bulk Plant Operating Permit Summary of the Title V permit

6.12.1.6 Conduct testing of the bulk gasoline plant as specified in the Bulk Plant Operating Permit Summary of the Title V permit.

6.12.1.7 Inspect the bulk plant during each loading and unloading of tank truck or trailer for visible liquid leaks and keep a record of the inspections. The following checklist may be used for recording the inspections: http://eemo.msfc.nasa.gov/environmental/activities/air/BulkGasCkLst.pdf

6.12.1.8 Maintain records of the amount of gasoline loaded to, and unloaded from, the bulk gasoline plant for at least 5 years. (See Section 9.2)

6.12.1.9 Maintain other records such as the compliance test results and the maintenance performed. (See Section 9.18)

6.12.1.10 Properly operate and maintain the bulk gas plant according to conditions of the Title V Permit.

6.12.1.11 Retain permit required records of monitoring data, maintenance data, and support information for a period of at least 5 years from the date of the monitoring, measurement, report, or application. (See Section 9.2)

6.13 Propulsion Engine and Launch Vehicle System Testing.

6.13.1 Responsibility of MSFC User Organizations. The MSFC User Organizations shall:

6.13.1.1 Operate and maintain the propulsion engine and launch vehicle system testing operations according to the conditions in the Title V permit.

6.13.1.2 Retain records of support information, such as the type and quantity of fuel used, and test duration, for a period of at least 5 years from the date of the application. (See Section 9.19)

6.14 Pipe Cleaning.

6.14.1 Responsibility of MSFC User Organizations. The MSFC User Organizations shall:

6.14.1.1 Conduct the pipe cleaning operations according to the conditions in the Title V permit.

6.14.1.2 Retain records of support information, such as the type of solvent used, for a period of at least 5 years from the date of the application. (See Section 9.20)

6.15 Air Stripper.

6.15.1 Responsibility of MSFC User Organizations. The MSFC User Organizations shall:

6.15.1.1 Properly operate and maintain the air stripper according to the conditions in the Title V permit.

6.15.1.2 Retain records of support information, such as the flow rates and organic content analyses, for a period of at least 5 years from the date of the application when required. (See Section 9.21)

6.16 Direct-Fired Equipment.

6.16.1 Responsibility of MSFC User Organizations. The MSFC User Organizations shall:

6.16.1.1 Monitor and record the amount of fuel used in the autoclave fired with natural gas when required. (See Section 9.22)

6.16.1.2 Monitor and record the process throughput in the autoclave fired with natural gas, and in the two electric autoclaves when required. (See Section 9.22)

6.16.1.3 Properly operate the autoclaves, ovens, etc., according to the manufacturer's recommendations.

6.16.1.4 Retain records of monitoring data and support information for a period of at least 5 years from the date of the application when required. (See Section 9.22)

6.17 Sandblasting.

6.17.1 Responsibility of MSFC User Organizations. The MSFC User Organizations shall:

6.17.1.1 Properly operate and maintain the sandblasting equipment so as to minimize the fugitive dust emissions.

6.17.1.2 Retain records of required monitoring data and support information for a period of at least 5 years from the date of the application. (See Section 9.4)

7. NOTES

The ADEM operating permit program approved by EPA under the CAA Title V (40 CFR Part 70) regulations requires that stationary sources of air pollution obtain operating permits, provided they are not categorized as trivial or insignificant sources. The Title V permit issued by ADEM is federally enforceable and encompasses emission requirements for criteria pollutants regulated by NAAQS, HAPs regulated by NESHAPs or MACT and NSPS regulations. The Title VI Stratospheric Ozone Protection Program requirements applicable to appliances and equipment using Class I

and Class II ozone depleting substances are also included in the air permit along with the requirements of CAAA Title III Chemical Accidental Prevention Provisions.

The air permit is a mechanism to implement the NAAQS set by the CAA in order to protect human health and the environment. The CAA strives to maintain air quality with the PSD regulations for areas in attainment of NAAQS, and NSR regulations for areas not in attainment of the NAAQS. The SIP details how NAAQS will be implemented in each state. The SIP establishes emission limitations for various types of stationary sources and requires permits for construction, modification, and operation of sources of air pollutants. The NSPS regulations set emission standards for categories of stationary sources that cause or contribute significantly to air pollution. The MACT standards promulgate emission standards for categories of "major" and "area" sources that generate HAPs.

The Title V Permit was issued based on MSFC being a research and development facility. MSFC can not manufacture or conduct R&D activities on any item that will itself become part of the space vehicle or flight hardware with out evaluating the need for additional environmental permitting.

8. SAFETY PRECAUTIONS AND WARNING NOTES

None

9. RECORDS

All records will be destroyed at the end of the retention period.

9.1 The EED will maintain the most current Major Source Operating Permit (Title V Permit) Facility Number 709-0014 on file according to the EED Records Retention Plan.

9.2 The Bulk Gasoline Plant loading/unloading checklists, and gasoline storage/use records will be maintained by the Logistics Services Department for a minimum of 5 years.

9.3 Boiler operation and maintenance records will be maintained by the maintenance provider for a minimum of 5 years.

9.4 Records of sandblasting activities and duration will be maintained by the user organization for a minimum of 5 years.

9.5 Maximum Achievable Control Technology reports will be maintained by the EED according to the EED Records Retention Plan.

9.6 Title V compliance reports will be maintained by the EED according to the EED Records Retention Plan.

9.7 Certified refrigerant recovery equipment registrations will be maintained by the FED for the life of the equipment.

9.8 Refrigerant tracking system for Class I and II ODS's will be maintained by the FED for a minimum of 5 years from the date of service.

9.9 Certification records for technicians performing appliance or refrigeration service or repairs will be maintained by the FED/LSD for a minimum of 5 years.

9.10 The EED will maintain notification letters and construction and/or operating permit applications according to the EED Records Retention Plan.

9.11 User Organization shall maintain notification of system upsets and corrective measures reported to the EED for a minimum of 5 years.

9.12 The service provider shall maintain Internal Combustion Engine maintenance, monitoring and support information records for a minimum of 5 years from the date of the monitoring, measurement, report, or application.

9.13 The FED shall maintain Surface Coating maintenance records for a minimum of 5 years. User organizations shall maintain monitoring and support information records for a minimum of 5 years from the date of the monitoring, measurement, report, or application.

9.14 The FED shall maintain fuel storage tank dimensions and capacities for the life of the tank. All other records should be kept by the user organization for a minimum of 5 years.

9.15 The user organization shall maintain Volatile Organic liquid storage records.

9.16 The user organization shall retain MACT operations records for a minimum of 5 years from the date of monitoring, measurement, report, or application. The FED shall maintain maintenance records for a minimum of 5 years.

9.17 User organizations shall retain hand-wipe cleaning records for a minimum of 5 years.

9.18 The maintenance provider will maintain Bulk Gas Plant permit required maintenance and compliance test records for a minimum of 5 years.

9.19 The User organization shall retain Propulsion Engine Test records for a minimum of 5 years.

9.20 User organizations shall retain Pipe Cleaning permit required records for a minimum of 5 years.

9.21 User organization shall retain Air Stripper permit required records for a minimum of 5 years.

9.22 User organization shall retain Direct-fired Fuel Burning Equipment permit required records for a minimum of 5 years.

9.23 User organization shall retain permit-required records of monitoring data, maintenance data, and support information for cold cleaning operations.

9.24 EED shall retain permit applications and ADEM/EPA notification letters according to the EED Records Retention Plan.

10. PERSONNEL TRAINING AND CERTIFICATION

10.1 Air Emissions Awareness Training for user organizations subject to CAA regulations will be conducted and documented by the EED if/when training is required. Training records will be maintained by the EED for a minimum of 5 years.

10.2 Certification of personnel authorized to maintain, repair or service appliances or refrigeration equipment, including air conditioning equipment, which use Class I or Class II ODS. (See Section 9.9)

11. FLOW DIAGRAM

Figure 1: Flowchart for boiler operations
Figure 2: Flowchart for fuel storage tank operations
Figure 3: Flowchart for cold cleaning operations
Figure 4: Flowchart for batch vapor halogenated solvent cleaning
Figure 5: Flowchart for gasoline bulk plant operations
Figure 6: Flowchart for compliance with Title V permit

Figure 1
Flowchart for Boiler Provisos of Title V Permit

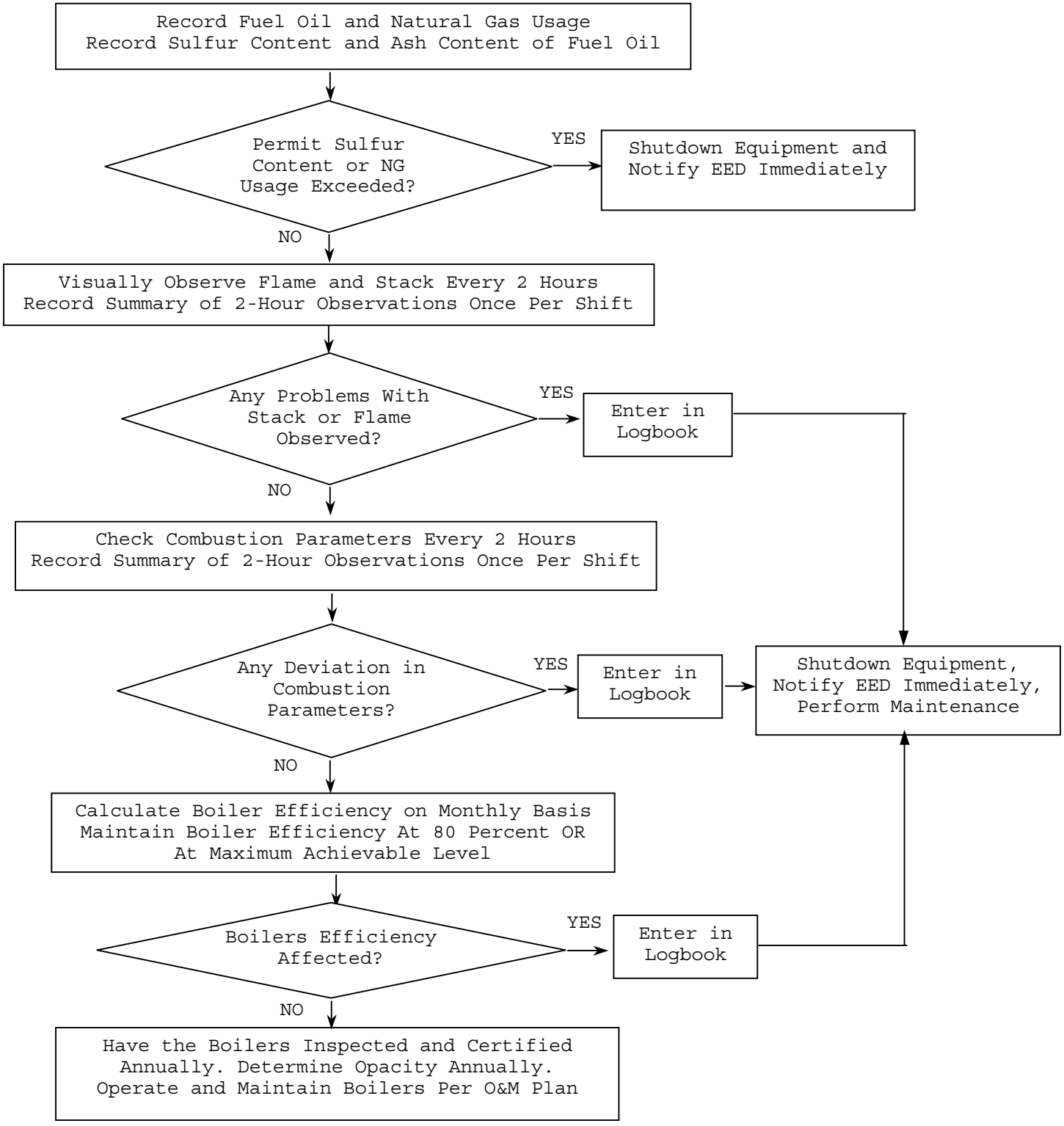


Figure 2
Flowchart for Fuel Storage Tanks Provisos of Title V Permit

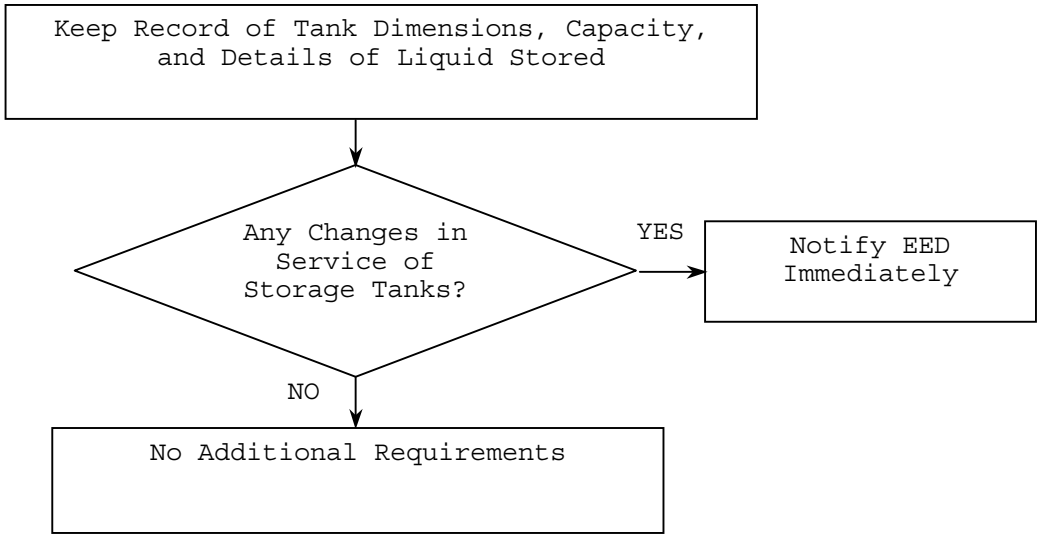


Figure 3
Flowchart for Cold Cleaning Provisos of Title V Permit

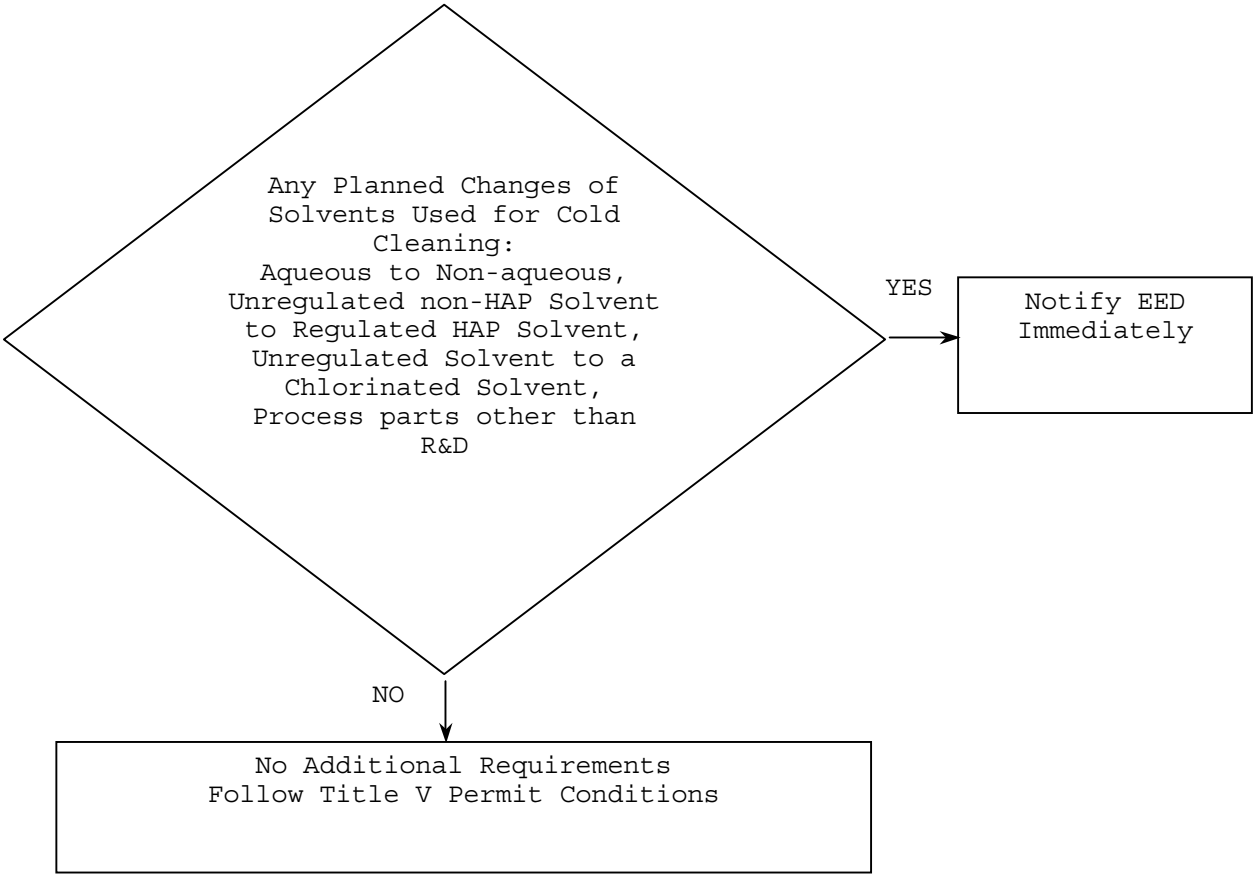


Figure 4
Flowchart for Batch Vapor Halogenated Solvent Cleaning Provisos of Title V Permit

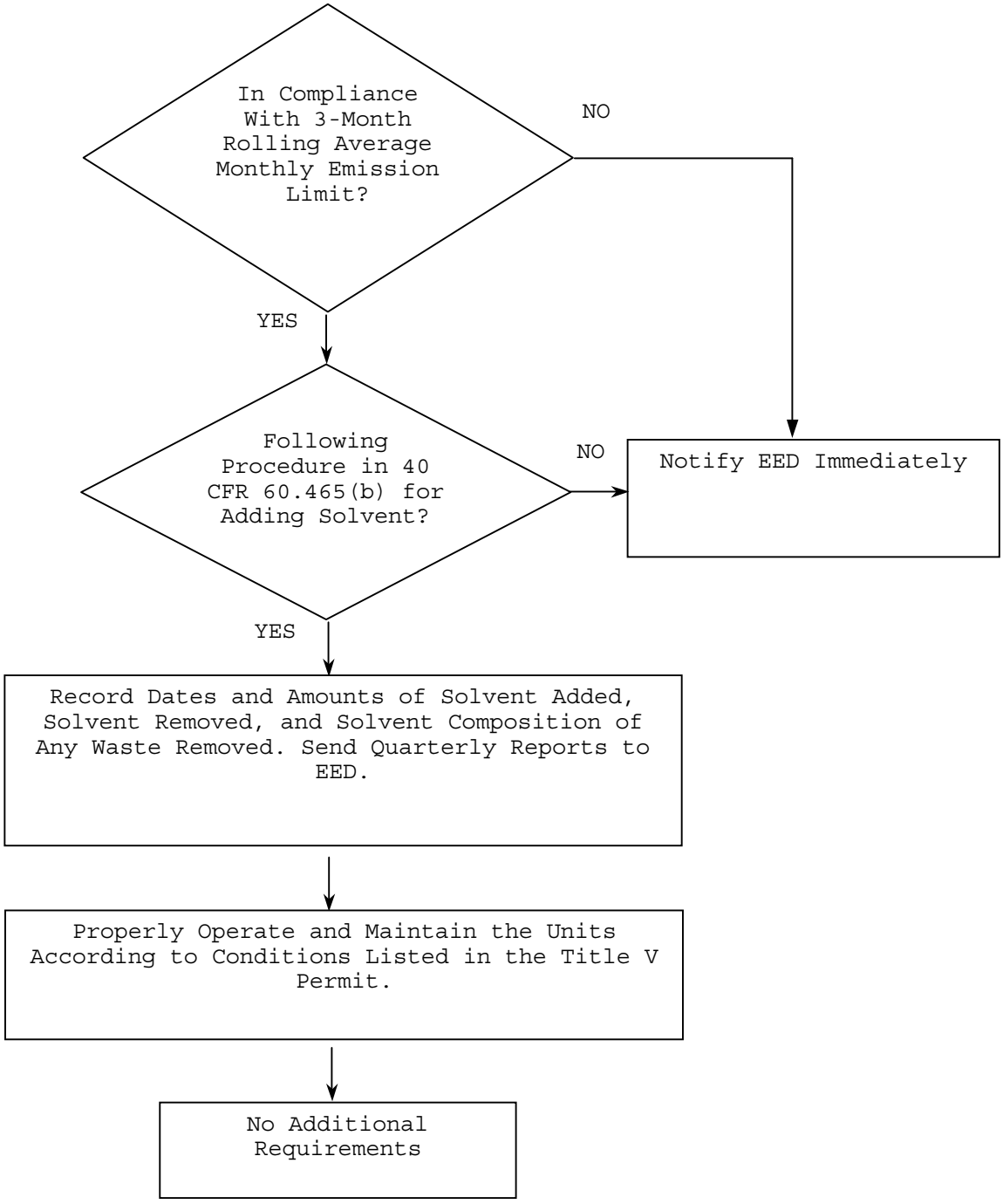


Figure 5
Flowchart for Gasoline Bulk Plant Provisos of Title V Permit

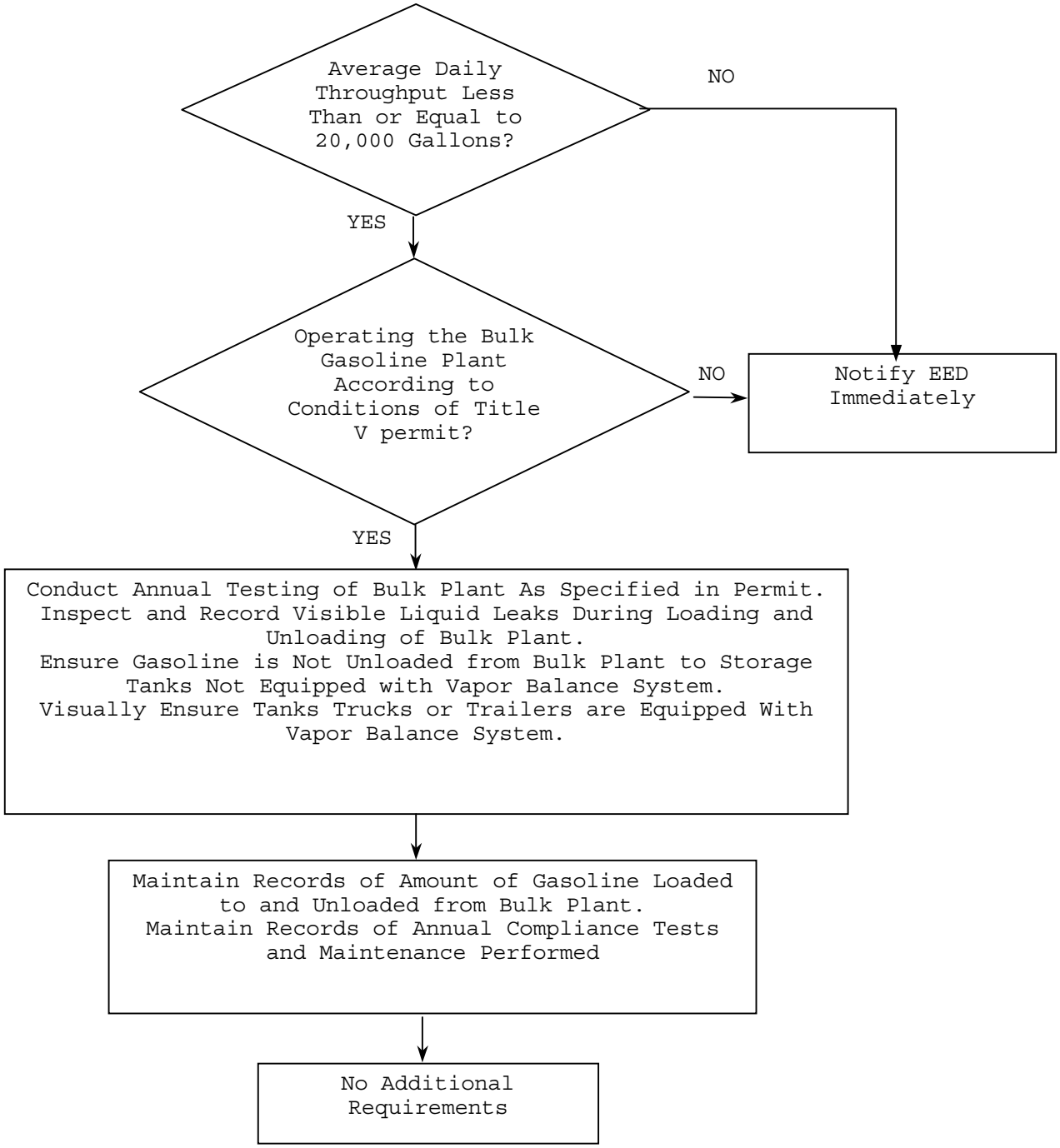
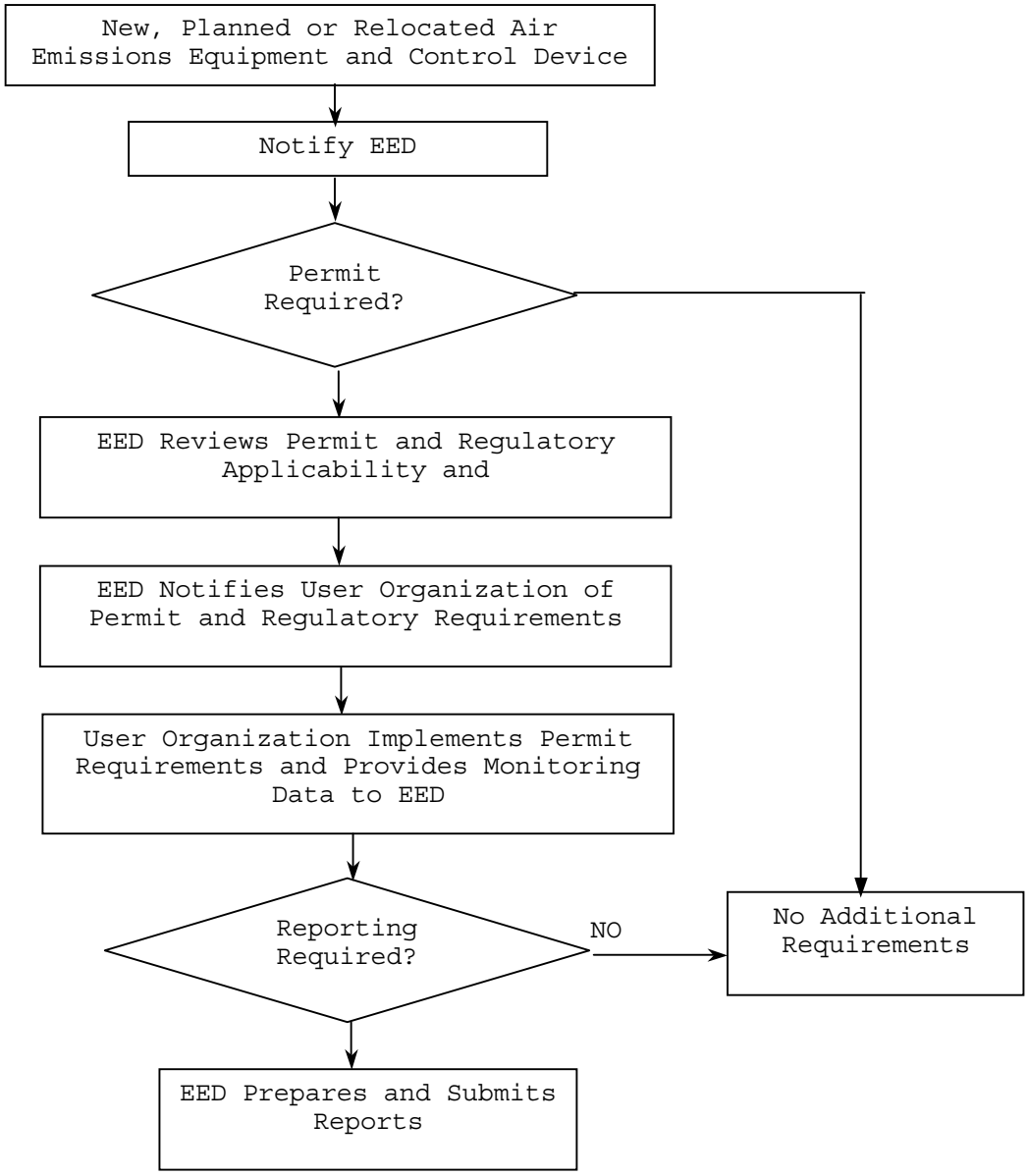


Figure 6
Flowchart for Compliance with Tile V Permit



12. CANCELLATION

None

Original signed by
Axel Roth for

A. G. Stephenson
Director